



SEQUENCE LISTING

<110> TOOLGEN, Inc.

<120> Regulatory Zinc Finger Proteins

<130> Q88285

<140> US 10/538,041

<141> 2005-06-08

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<151> 2002-12-09

<160> 129

<170> PatentIn version 3.2

<210> 1

<211> 23

<212> PRT

<213> Homo sapiens

<400> 1

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
1 5 10 15

Arg Arg His Gly Arg Thr His
20

<210> 2

<211> 23

<212> PRT

<213> Homo sapiens

<400> 2

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys
1 5 10 15

Arg Arg His Cys Ile Leu His
20

<210> 3

<211> 23

<212> PRT

<213> Homo sapiens

<400> 3

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu
1 5 10 15

Asn Arg His Arg Arg Thr His
20

<210> 4
<211> 23
<212> PRT
<213> Homo sapiens

<400> 4

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15

Thr Arg His Gln Lys Ile His
20

<210> 5
<211> 23
<212> PRT
<213> Homo sapiens

<400> 5

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His
20

<210> 6
<211> 23
<212> PRT
<213> Homo sapiens

<400> 6

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15

Thr Arg His Lys Lys Ser His
20

<210> 7
<211> 23
<212> PRT
<213> Homo sapiens

<400> 7

Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
1 5 10 15

Thr Val His Gln Lys Ile His
20

<210> 8
<211> 23
<212> PRT

<213> Homo sapiens

<400> 8

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 9

<211> 25

<212> PRT

<213> Homo sapiens

<400> 9

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His
20 25

<210> 10

<211> 23

<212> PRT

<213> Homo sapiens

<400> 10

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15

Lys Thr His Thr Arg Thr His
20

<210> 11

<211> 23

<212> PRT

<213> Homo sapiens

<400> 11

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15

Thr Arg His Gln Arg Ile His
20

<210> 12

<211> 23

<212> PRT

<213> Homo sapiens

<400> 12

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 13
<211> 23
<212> PRT
<213> Homo sapiens

<400> 13

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu
1 5 10 15

Asn Val His Arg Arg Ile His
20

<210> 14
<211> 23
<212> PRT
<213> Homo sapiens

<400> 14

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1 5 10 15

Arg Arg His Glu Thr Thr His
20

<210> 15
<211> 23
<212> PRT
<213> Homo sapiens

<400> 15

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15

Ile Arg His Gln Arg Ile His
20

<210> 16
<211> 23
<212> PRT
<213> Homo sapiens

<400> 16

Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu
1 5 10 15

Thr Arg His Lys Arg Ile His
20

<210> 17
<211> 23
<212> PRT
<213> Homo sapiens

<400> 17

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
1 5 10 15

Asn Val His Lys Arg Thr His
20

<210> 18
<211> 23
<212> PRT
<213> Homo sapiens

<400> 18

Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu
1 5 10 15

Thr Arg His Met Lys Lys Ser
20

<210> 19
<211> 24
<212> PRT
<213> Artificial

<220>
<223> Artificial zinc finger domain

<400> 19

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu
1 5 10 15

Gln Arg His Val Arg Asn Ile His
20

<210> 20
<211> 83
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 20

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
 1 5 10 15
 Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
 20 25 30
 Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
 35 40 45
 Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
 50 55 60
 Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
 65 70 75 80
 Gly Glu Lys

<210> 21
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 21

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
 1 5 10 15
 Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 65 70 75 80
 Gly Glu Lys

<210> 22
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 22

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
 1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
65 70 75 80

Gly Glu Lys

<210> 23
<211> 83
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein
<400> 23

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys
50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr
65 70 75 80

Gly Glu Lys
<210> 24
<211> 84
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein
<400> 24

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
1 5 10 15

Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Leu Cys Gln
20 25 30

Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met

35 40 45
 Lys Lys Ser His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln
 50 55 60
 Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His
 65 70 75 80
 Thr Gly Glu Lys

<210> 25
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 25

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
 1 5 10 15
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
 20 25 30
 Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
 35 40 45
 Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
 50 55 60
 Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
 65 70 75 80
 Gly Glu Lys

<210> 26
 <211> 84
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 26

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
 1 5 10 15
 Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
 20 25 30
 Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
 35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala Gln

50 55 60
 Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser His
 65 70 75 80

Thr Gly Glu Lys

<210> 27
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 27

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
 1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
 65 70 75 80

Gly Glu Lys

<210> 28
 <211> 85
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 28

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu
 1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys
 20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His
 35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala
 50 55 60

Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser
 65 70 75 80

His Thr Gly Glu Lys
 85

<210> 29
 <211> 84
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 29

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu
 1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys
 20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His
 35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly
 50 55 60

Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His
 65 70 75 80

Thr Gly Glu Lys

<210> 30
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 30

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys
 1 5 10 15

Arg Arg His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Ile Cys Arg
 20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr

35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys
 50 55 60
 Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp
 85 90 95
 Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr Gly Glu Lys
 100 105 110

<210> 33
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 33

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
 1 5 10 15
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser
 20 25 30
 Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg
 35 40 45
 Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys
 50 55 60
 Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp
 85 90 95
 Lys Ser Cys Leu Asn Arg His Arg Arg Thr His Thr Gly Glu Lys
 100 105 110

<210> 34
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 34

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
 1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Gly
 20 25 30
 Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln
 35 40 45
 Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg
 85 90 95
 Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
 100 105 110

<210> 35
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 35

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
 1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
 50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 36
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 36

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu
20 25 30
Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys
35 40 45
Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
50 55 60
Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe
85 90 95
Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu
100 105 110

Lys

<210> 37

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 37

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15
Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met
20 25 30
Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
35 40 45
Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys
50 55 60
Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
85 90 95
Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
100 105 110

<210> 38

<211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 38

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
 1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser
 20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys
 85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys
 100 105 110

<210> 39
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 39

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
 1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
 65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp
 85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 40
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 40

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu
 1 5 10 15

Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys
 50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg
 65 70 75 80

His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe
 85 90 95

Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu
 100 105 110

Lys

<210> 41
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 41

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 50 55 60
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
 85 90 95
 Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 44
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 44

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
 1 5 10 15
 Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys
 20 25 30
 Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg
 35 40 45
 His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys
 50 55 60
 Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile
 65 70 75 80
 His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe
 85 90 95
 Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu
 100 105 110

Lys

<210> 45
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 45

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu

1 5 10 15
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
 20 25 30
 Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
 35 40 45
 Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys
 50 55 60
 Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln
 85 90 95
 Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys
 100 105 110

<210> 46
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 46

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
 1 5 10 15
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys
 50 55 60
 Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
 85 90 95
 Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 47
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 47

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15
Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys
20 25 30
Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg
35 40 45
His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys
50 55 60
Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg Arg Thr
65 70 75 80
His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe
85 90 95
Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu
100 105 110
Lys

<210> 48

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 48

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn
20 25 30
Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln
35 40 45
Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys
50 55 60
Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr
65 70 75 80
Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg
85 90 95
Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
100 105 110

<210> 49
<211> 113
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 49

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15
Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg
20 25 30
Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln
35 40 45
Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys
50 55 60
Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe
85 90 95
Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu
100 105 110

Lys

<210> 50
<211> 113
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 50

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15
Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
20 25 30
Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
35 40 45
Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50 55 60
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe

				85					90					95			
Ala	Arg	Ser	Asp	Glu	Leu	Asn	Arg	His	Lys	Lys	Arg	His	Thr	Gly	Glu		
			100					105					110				

Lys

<210> 51
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 51

Tyr	Thr	Cys	Lys	Gln	Cys	Gly	Lys	Ala	Phe	Ser	Val	Ser	Ser	Ser	Leu		
1				5					10					15			
Arg	Arg	His	Glu	Thr	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Arg	Cys	Glu		
			20					25					30				
Glu	Cys	Gly	Lys	Ala	Phe	Arg	Trp	Pro	Ser	Asn	Leu	Thr	Arg	His	Lys		
		35					40					45					
Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Ile	Cys	Arg	Lys	Cys	Gly	Arg		
	50					55					60						
Gly	Phe	Ser	Arg	Lys	Ser	Asn	Leu	Ile	Arg	His	Gln	Arg	Thr	His	Thr		
65				70					75					80			
Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Lys	Gln	Cys	Gly	Lys	Ala	Phe	Ser	Val		
			85					90						95			
Ser	Ser	Ser	Leu	Arg	Arg	His	Glu	Thr	Thr	His	Thr	Gly	Glu	Lys			
			100					105					110				

<210> 52
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 52

Tyr	Lys	Cys	Gly	Gln	Cys	Gly	Lys	Phe	Tyr	Ser	Gln	Val	Ser	His	Leu		
1				5				10						15			
Thr	Arg	His	Gln	Lys	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Lys		
			20					25					30				
Gln	Cys	Gly	Lys	Ala	Phe	Ser	Val	Ser	Ser	Ser	Leu	Arg	Arg	His	Glu		
		35					40					45					

Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
100 105 110

<210> 53
<211> 113
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 53

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys
20 25 30

Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg
35 40 45

His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys
50 55 60

Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe
85 90 95

Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu
100 105 110

Lys

<210> 54
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 54

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu

1	5	10	15
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Gly	20	25	30
Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln	35	40	45
Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys	50	55	60
Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr	65	70	75
Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln	85	90	95
Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys	100	105	110

<210> 55
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 55

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu	1	5	10	15
Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg	20	25	30	
Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln	35	40	45	
Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys	50	55	60	
Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr	65	70	75	80
Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg	85	90	95	
Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys	100	105	110	

<210> 56
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 56

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys
100 105 110

<210> 57

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 57

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys
50 55 60

Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
100 105 110

<210> 58

<211> 111

<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 58

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys
20 25 30
Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly
35 40 45
Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50 55 60
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys
85 90 95
Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys
100 105 110

<210> 59
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 59

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu
1 5 10 15
Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly
20 25 30
Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln
35 40 45
Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
50 55 60
Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
65 70 75 80
Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg
85 90 95
Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys

100

105

110

<210> 60

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 60

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
100 105 110

<210> 61

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 61

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu
20 25 30

Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys
35 40 45

Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr
65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln
85 90 95

Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr Gly Glu Lys
100 105 110

<210> 62
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 62

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr
65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val
85 90 95

Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys
100 105 110

<210> 63
<211> 113
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 63

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu
1 5 10 15

Asn Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys
 50 55 60
 Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln
 85 90 95
 Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys
 100 105 110

<210> 66
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 66

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
 1 5 10 15
 Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Thr Cys Lys
 20 25 30
 Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu
 35 40 45
 Thr Thr His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys
 50 55 60
 Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg
 65 70 75 80
 His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe
 85 90 95
 Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr Gly Glu
 100 105 110

Lys

<210> 67
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein
 <400> 67

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
 1 5 10 15
 Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro
 20 25 30
 Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln
 35 40 45
 Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys
 50 55 60
 Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
 85 90 95
 Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 68
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein
 <400> 68

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
 1 5 10 15
 Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ser Cys Gly
 20 25 30
 Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys
 35 40 45
 Ile Leu His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys
 50 55 60
 Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr
 65 70 75 80
 Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln
 85 90 95
 Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys
 100 105 110

<210> 69
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 69

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Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1          5          10          15
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys
          20          25          30
Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly
          35          40          45
Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys
          50          55          60
Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr
65          70          75          80
Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg
          85          90          95
Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
          100          105          110

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<210> 70
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 70

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Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1          5          10          15
Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu
          20          25          30
Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys
          35          40          45
Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys
          50          55          60
Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr
65          70          75          80
Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg
          85          90          95

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Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys
 100 105 110

<210> 71
 <211> 113
 <212> PRT
 <213> Artificial

<220>
 <223> artificial zinc finger protein

<400> 71

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
 1 5 10 15
 Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
 20 25 30
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
 35 40 45
 Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys
 50 55 60
 Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg
 65 70 75 80
 His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe
 85 90 95
 Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu
 100 105 110

Lys

<210> 72
 <211> 96
 <212> PRT
 <213> Homo sapiens

<400> 72

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
 1 5 10 15
 Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
 20 25 30
 Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn
 35 40 45
 Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
 50 55 60
 Leu Glu Lys Gly Glu Glu Pro Trp Leu Val Glu Arg Glu Ile His Gln

245 250 255
 Leu Leu Ser Gln
 260

 <210> 74
 <211> 127
 <212> PRT
 <213> *Sacharromyces cerevisiae*

 <400> 74
 Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr
 1 5 10 15
 Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn
 20 25 30
 Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn
 35 40 45
 Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn
 50 55 60
 Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala
 65 70 75 80
 Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val
 85 90 95
 Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys
 100 105 110
 Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
 115 120 125

 <210> 75
 <211> 63
 <212> PRT
 <213> *Homo sapiens*

 <400> 75
 Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu
 1 5 10 15
 Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met
 20 25 30
 Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr
 35 40 45
 Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp
 50 55 60

 <210> 76
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<212> DNA
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<210> 77
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<400> 77
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<210> 78
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<400> 78
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<210> 79
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<400> 79
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<400> 80
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<400> 81
ggggagaggg ac 12

<210> 82
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<400> 82
gtggggagag gg 12

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<210> 83
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<400> 83
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<400> 84
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<400> 85
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<400> 86
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<400> 87
gggtgggggg ag 12

<210> 88
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<400> 88
agggggtggg gg 12

<210> 89
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<400> 89
gggtgggggag ag 12

<210> 90
<211> 12
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<400> 90
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<210> 91
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<400> 91
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<210> 92
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<400> 92
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<211> 12
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<400> 93
agagccgggg tg 12

<210> 94
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<400> 94
agggaagctg gg 12

<210> 95
<211> 12
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<400> 95
gtgggtgagt ga 12

<210> 96
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<212> DNA
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<400> 96
gtgtgggggtt ga 12

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<400> 97
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<210> 98
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<400> 98
gaggggtgttg ga 12
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<400> 99
ggtgttgagag cg 12

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<400> 100
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<400> 101
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<210> 102
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<400> 102
ggtggggaga gg 12

<210> 103

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<211> 12
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<400> 103
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<400> 104
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<210> 105
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<400> 105
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<211> 12
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<400> 106
gggggtcgag ct 12

<210> 107
<211> 12
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<400> 107
gaagggaag ct 12

<210> 108
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<400> 109
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<210> 110
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 <400> 114
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 <210> 115
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 <400> 115
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<400> 116
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<400> 117
gggggtggggg ga 12

<210> 118
<211> 12
<212> DNA
<213> Homo sapiens

<400> 118
caagggggag gg 12

<210> 119
<211> 90
<212> PRT
<213> Saccharomyces cerevisiae

<400> 119
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20 25 30
Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr Asn Ala Leu Gly
35 40 45
Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro Ser Lys Gly Val
50 55 60
Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu Gln Gln Pro Ile
65 70 75 80
Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
85 90

<210> 120
<211> 3480
<212> DNA
<213> Homo sapiens

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<222> (2363)..(2363)
<223> mRNA start site

<220>
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 aatgagccct tagggctcag agcctccatc ctgccccaa agtctctacag cttgtgctcc 360
 tggggtgcta gaggcgcaca aggaggaaa ttagtggctt cccttccata tcccgttcat 420
 cagcctagag catggagccc aggtgaggag gcctgcctgg gagggggccc tgagccagga 480
 aataaacatt tactaactgt acaaagacct tgtccctgct gctgggggagc ctgccaagtg 540
 gtggagacag gactagtga cgaatgatgg aaaggagggg ttgggggtggg tgggagccag 600
 cccttttcct cataagggcc ttaggacacc ataccgatgg aactgggggt actggggagg 660
 taacctagca cctccaccaa accacagcaa catgtgctga ggatggggct gactaggtaa 720
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 ttgatgtctg caggccagat gagggctcca gatggcacat tgtcagaggg acacactgtg 1620

gcccctgtgc	ccagccctgg	gctctctgta	catgaagcaa	ctccagtccc	aaatatgtag	1680
ctgtttggga	ggtcagaaat	aggggggtcca	ggagcaaact	ccccccaccc	cctttccaaa	1740
gcccattccc	tcttttagcca	gagccgggggt	gtgcagacgg	cagtcactag	ggggcgctcg	1800
gccaccacag	ggaagctggg	tgaatggagc	gagcagcgtc	ttcgagagtg	aggacgtgtg	1860
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